

# 2SC1944

NPN EPITAXIAL PLANAR TYPE

## DESCRIPTION

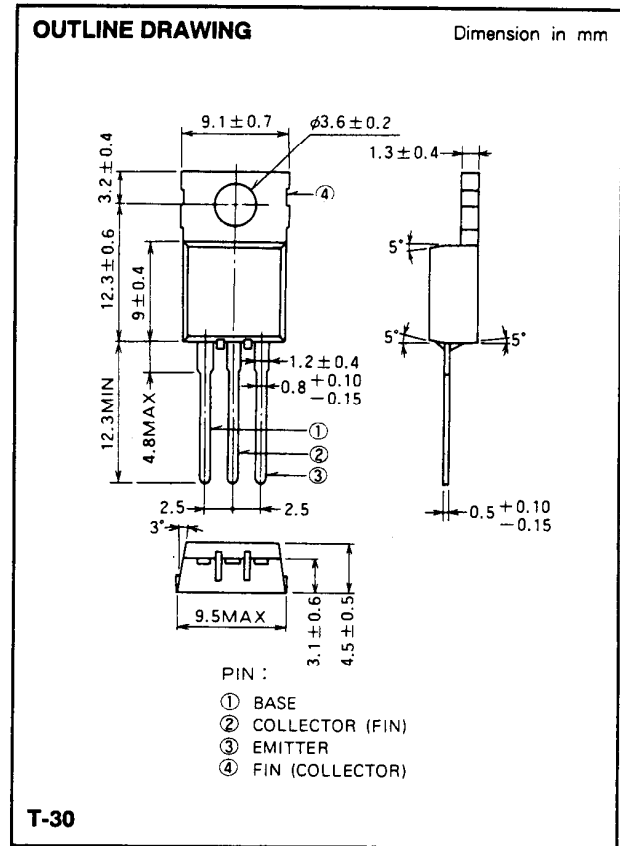
2SC1944 is a silicon NPN epitaxial planar type transistor designed for RF power amplifiers on HF bandmobile radio applications.

## FEATURES

- High power gain :  $G_{pe} \geq 11\text{dB}$ , @  $V_{cc} = 12\text{V}$ ,  $f = 27\text{MHz}$ ,  $P_o = 13\text{W}$
- TO-220 package similarly is combinient for mounting.
- Emitter ballasted construction for good performances.
- Ability to withstanding infinite load VSWR when operated at  $V_{cc} = 16\text{V}$ ,  $P_o = 13\text{W}$ ,  $f = 27\text{MHz}$

## APPLICATIONS

10 to 14W output power class AB amplifiers in HF band.



## ABSOLUTE MAXIMUM RATINGS (T<sub>c</sub> = 25 °C unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V <sub>CB0</sub>	Collector-base voltage		80	V
V <sub>EB0</sub>	Emitter-base voltage		5	V
V <sub>CE0</sub>	Collector-emitter voltage	R <sub>BE</sub> = ∞	40	V
I <sub>c</sub>	Collector current		6	A
P <sub>c</sub>	Collector dissipation	T <sub>a</sub> = 25 °C	1.5	W
		T <sub>c</sub> = 25 °C	20	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		- 55 to 150	°C
R <sub>th-c</sub>	Thermal resistance	Junction to ambient	83.3	°C/W
		Junction to case	6.25	°C/W

Note. Above parameters are guaranteed independently.

## ELECTRICAL CHARACTERISTICS (T<sub>c</sub> = 25 °C unless otherwise noted)

Symbol	Parameter	Test conditions	Limits		Unit
			Min	Max	
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>c</sub> = 1mA, I <sub>E</sub> = 0	80		V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> = 5mA, I <sub>c</sub> = 0	5		V
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>c</sub> = 10mA, R <sub>BE</sub> = ∞	40		V
I <sub>cBO</sub>	Collector cutoff current	V <sub>CB</sub> = 30V, I <sub>E</sub> = 0		0.1	mA
I <sub>EBO</sub>	Emitter cutoff current	V <sub>EB</sub> = 4V, I <sub>c</sub> = 0		0.1	mA
h <sub>FE</sub>	DC forward current gain	V <sub>CE</sub> = 10V, I <sub>c</sub> = 0.1A	10	180	-
P <sub>o</sub>	Output power	V <sub>cc</sub> = 12V, f = 27MHz, P <sub>in</sub> = 1W	13		W
η <sub>c</sub>	Collector efficiency	V <sub>cc</sub> = 12V, f = 27MHz, P <sub>in</sub> = 1W	55		%

Note. Above parameters, ratings, limits and conditions are subject to change.